

Digital Solar Thermal Controller

Primos 600

Field of application:

Temperature difference controller with multiple System diagrams, integrated target temperature- and multifunctional controller



Specifications PRIMOS 600

Autonomous electronic temperature difference controller, continuous operation	
Housing Material	100% recyclable ABS housing
Dimensions L x W x D in mm.	176 x 162 x 44
Protection class	IP30 according to DIN 40050, EN 60529
Operating voltage	AC 230 voltage, 50 Hz, -10 to +15%
Power consumption	< 2 W
Max. line cross-section for 230 V connections	2.5 mm ² finely stranded/single core
Inputs 1-4 (protected by varistors)	For temperature sensors PT 1000 (1 kΩ at 0 °C)
Other inputs	VFS (Vortex flow sensor)
Measuring range (temperature)	-30 °C to +250 °C
Interfaces	RS 485 for Prozeda bus
Output R1 - R3	Electronic semiconductor relay (Triac) with zero-cross switch, opto-decoupled, 230 V AC, 50 Hz, min. 10 mA, max. 150 W, with cos φ >= 0.9
Total output of all outputs	Max. 300 W
Output R0	Relay, potential-free normally open contact, max. 250 V AC / 1 A, also suitable for protective extra-low voltage
Control output for HE pump	PWM signal: 1kHz, ViL < 0.5 V DC, ViH > 9 V DC, 10 mA max. Analog signal: 0 - +10 V DC +/- 3%, 10 mA max.
Display	Backlit LCD display
Type 1 action	Type 1.B and type 1.Y
Software class	A
Protection	Microfuse 5 x 20 mm, 2 A/T (2 ampere, slow)
Ambient temperature	0 to +40 °C
Storage temperature	-10 to +60 °C

Functionality Hardware:

Mechanical Data:

- Variable design housing approx. 176 x 162 x 44mm, protection class IP30, light grey, cover plate Prozeda
- Illuminated LCO display with pictograms, 60 x 45mm,
- Centralized operation with 4 pressure keys
- Piezo-acoustic signal transmitter

Outputs 230V AC:

- 3 electronic output 230V/AC, min. 10mA, max. 1A, cos. φ ≥ 0,9; with zero crossing switch, fuse protection 2AIT
- RPM control by block modulation
- 2 x output for pump speed control
- 1 x output for potential heating / cooling function
- Connections: Screw-type terminals, connectors grid 5,0mm

Outputs low voltage, to control high-efficiency pumps:

- 2 electronic control output, control signal configurable by software between PWM-digital signal approx. 10V, and analogue signal 0-10V, +/-3%
- Connections: Screw-type terminals, connectors grid 5,0mm

Outputs potential-free: (auxilliary heating)

- 1 relay output with potential-free make contact, also suitable for protective low voltage, max. 250V AC /1A
- Connections: Screw-type terminals, connectors grid 5,0mm

Inputs:

- 6 temperature inputs for PT1 000 sensors
- 1 digital input for flow transmitter (paddle-wheel flow transmitter)
- 1 input for radiation sensor
- Connections: Screw-type terminals, connectors grid 5,0mm

Interfaces

Grundfos VFS-sensor:

- 1 interface for Grundfos VFS -sensor incl. 5V supply voltage
- Connections: Screw-type terminals, connectors grid 5,0mm

Micro-SD card:

- 1 Micro-SD card slot

Prozeda-data bus:

- 1 Prozeda data bus interface

Functionality Software:

- Temperature difference controller with multiple system diagrams, 1 - 2 collectors, 1 - 2 storage tanks
- Real time clock
- Re-cooling function (holiday mode)
- Loading time storage tank
- System protection
- Collector protection
- Pump protection
- Anti-freeze protection
- Recording solar radiation
- Energy yield measurement
- adjustable control time during o. while priority charging
- Loading of second-tier storage tank with logical backspace to prior storage tank (holding time adjustable)
- Parallel charging of storage tanks
- Heat exchanger protection
- Target temperature operation
- "Shut-off pool" (storage tank can be deactivated)
- Parallel pump operation
- Drain-Back function
- RPM control
- Sensor monitoring
- Manual operation
- Flow monitoring
- Tube collector with adjustable enable time slot
- Acoustical error indications
- 4 Multifunction controller packages (Heating, Cooling, delta T, free sensor selection, 12 adjustable time slots for additional functions)
- Data logging with recording function
- System specific parameter setup
- Firmware update
- Possibility of controllers networking
- Remote visualisation from any distance (conexio)
- Remote control

Delivery

- 1 piece controller device, sequential packing
- 1 piece user manual, English
- 1 data CD-Rom (contains controller specific additional information)
- 1 piece assembly kit
- 2 piece PT1000 Store sensor, with PVC-cable, length 2000mm, brass sleeve 6x25mm
- 2 piece PT1000 Collector sensor, with silicon cable, length 1500mm, brass sleeve 6x25mm